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AUSTRALIAN PLATYPEZIDAE [DIPTERA].

By

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(Figures 1 and 2.)

To my knowledge no species of Australian Platypezidae have been described with the exception of one which was erroneously placed by A. White in the Empidæ¹.

When collecting in Australia and in Tasmania in the years 1921 and 1923, I came across a few specimens of that family belonging to two species, and later Dr. Eustace W. Ferguson was kind enough to send me for study some specimens which he had collected in New South Wales. My best thanks are due to him for the loan of this material, which I have returned to him; the types are deposited in the Australian Museum, Sydney.

All these specimens belong to the genus *Platypeza*, and are small and inconspicuous forms of moderate interest, among which I distinguish four species that are rather difficult to differentiate unless a careful investigation of the male genitalia be made.

The species described by White, *Ironomyia maculata*, is, on the contrary, very interesting on account of its peculiar characters, which give it a special place in the family.

The chief characters of the Platypezidae may be summed up as follows:—

Head large; eyes nearly always touching in the male for a long space, well distant in the female; upper facets of the male's eyes nearly always dilated; antennae composed of three simple joints, the third joint being always larger than the others and sometimes conspicuously so, and provided with a terminal arista which has usually a small basal segment. Thorax with chaetotaxy little developed, only on the sides of the mesonotum and the edge of the scutellum. Legs nearly always with the hind tibiae dilated and also the first three or four joints of the hind tarsi; the genera *Opetia* and *Ironomyia* form an exception in this peculiar character of the family. The wings have a peculiar glassy texture, their venation varying a great deal according to genera; in the majority the anterior branch of M is forked and the discal cell is present, besides the vein Cu_1 meets the anal vein in an acute angle, the so-called anal cell being therefore somewhat elongated; the genera *Opetia* and *Ironomyia* again form an exception in that respect.

¹ White—Proc. Royal Soc. Tasmania, 1916, p. 217.

The two Australian genera may be easily distinguished in the following manner:—

1. Eyes touching in the male; hind tibiae and base of hind tarsi dilated. Sc not fused with R_1 , $M_1 + 2$ forking near the tip of the wing a long way from the posterior cross vein; anal cell with its extremity acute. *Platypeza*.

2. Eyes only approximated in the male; hind tibiae and tarsi not dilated; Sc fused on a great part of its length with R_1 ; fork of M long, placed at the top of the posterior cross vein which is oblique; anal cell with its extremity rounded. *Ironomyia*.

Genus PLATYPEZA Meig.

Key to the Species.—

(Until more material is obtained, the species can be safely differentiated only in the male sex, and on characters given by the genitalia.)

1. Distal end of the claspers rounded 2
 Distal end with a sharp tooth *P. acuminata*, n. sp.
2. The subanal internal lamellæ with a long pointed projection at their internal corner *P. fergusoni*, n. sp.
 The subanal lamellæ without projection 3
3. Subanal lamellæ with their edge denticulated *P. denticulata*, n. sp.
 These lamellæ with a smooth edge *P. griseola*, n. sp.

As the four species are very similar, I shall describe only one of them at some length and compare the others with it.

PLATYPEZA FERGUSONI n. sp.

(Figure 1A.)

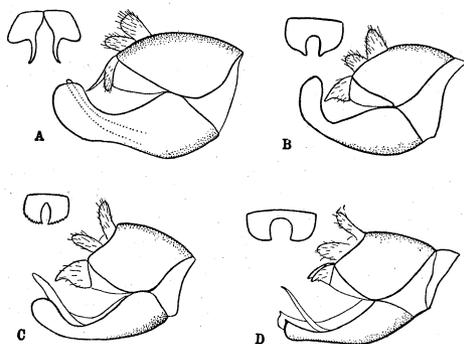


Figure 1.

A. Hypopygium of *Platypeza fergusoni* in profile. B. *P. griseola*. C. *P. denticulata*. D. *P. acuminata*. On the left of each hypopygium is represented the sub-anal lamellæ of the corresponding species.

MALE.

Specific Characters.—Velvety black, the abdomen with grey markings at the tip and on the side of the base of the penultimate visible segment; halteres brown; legs brown with lighter parts at the knees and on the tarsi.

Face and frons bare; antennae dark with the third joint roundish, only a little larger than the preceding one; arista bare, about three times as long as the three first joints.

Thorax with the usual chaetotaxy; scutellum with four erect bristles; abdomen with a rather long black pubescence.

First and second joints of the hind tarsi equally broad, the first distinctly longer; third joint narrower, about as long as the first; fourth joint nearly normal; distal border of the two first joints convex on the external face of the tarsi, straight on the internal face.

Venation.—Sc ending a little before the middle of the wing; *r-m* placed much before the end of that vein; M_1 about three times as long as M_2 ; *m* very little longer than the last part of M_3 , first part of A distinctly but not much shorter than the last one; stigma not distinctly coloured.

Hypopygium as per Fig. 1A; the side-pieces relatively short and broad with a well rounded extremity; the sub-anal internal lamellae with a long projection at their internal corner, this projection slightly curved outwards.

Length of body $2\frac{2}{3}$ mm., wing 3 mm.

FEMALE.

Venation as in male, differing only sometimes in M_2 being not quite so short; face and frons bare, the latter about one-quarter of the total head width; antennae as in male.

Mesonotum grey with four little distinct darker bands; abdomen velvety black with grey markings, the first segment completely grey (when seen from the side), the second to the fifth with a basal transverse grey band interrupted in the middle, sixth completely grey. Halteres ochraceous. Legs lighter than in the male especially the tarsi; hind tarsi much broader than in the male, the second and third joints relatively smaller than the first, the third being of the same width as the preceding one.

Same size as in the male.

Holotype, male, Hobart, January 4th, 1923 (A. Tonnoir). This specimen was collected in sweeping the grass around the water reserve pond.

Paratypes, four males and five females bred from agaric by Dr. Ferguson, Sydney, April, 1917. One female from Wilmot, Tasmania, January 8th, 1923 (A. Tonnoir).

Another female found by the writer on Mount Wellington, Tasmania, differs from the others by some detail of colouration, and may belong to another species, but, as it is rather insecure to base a new species on a single female specimen, I will only note here the difference to call attention to this form. The palpi are bright orange, the proboscis a little darker. There are six bristles on the scutellum and the prescutellar bristles are more numerous. The fifth abdominal segment is completely grey, the base of the femora orange, the knees more broadly so, and also the tarsi.

PLATYPEZA GRISEOLA *n. sp.*

(Figure 1B.)

MALE.

Specific Characters.—Very similar to the preceding species, from which it differs only by some details of colouration, by a few minor points in the venation and by the structure of the hypopygium.

The two first joints of the antennae orange (the third missing); palpi orange, labellum darker. Mesonotum greyish black with very indistinct bands. Halteres brown, their stem and apex of the knob lighter. Abdomen black with extensive greyish markings; sides of first and second segments grey, third and fourth with a grey transverse band extending nearly their whole width but not touching their anterior border and interrupted in the middle, fifth and sixth segments completely grey but for a narrow transverse black line at their base. Legs brown ochraceous, knees and tarsi lighter.

Venation.—*r-m* nearer the level of the extremity of Sc ; M_2 relatively longer and the last portion of M_3 equal to *m* or slightly longer.

Hypopygium with the side pieces not so broadly rounded at the tip, internal lamellae without internal projection (see Fig. 1B).

Size: Body and wing $2\frac{1}{2}$ mm.

Holotype male, Sydney; bred from agaric with the preceding species by Dr. Ferguson.

PLATYPEZA DENTICULATA *n. sp.*

(Figure 1C.)

Male.—Nearly completely dull species with only the anterior tarsi somewhat lighter and the apex of the sixth abdominal segment grey.

Venation as in *P. fergusoni*, differing only by the stigma being more distinctly marked, by shorter M_2 (being about $\frac{3}{4}$ of M_1), by *m* being equal to the last part of M_3 . Hind tarsi similar.

Hypopygium according to Fig. 1C; clasper of about the same shape as in the two preceding species but more elongated; sub-anal lamellae gently denticulated on their edge.

Size of body and wing respectively: $2\frac{2}{3}$ and $2\frac{1}{2}$ mm.

Holotype: Sydney, August 26th, 1923 (Dr. Ferguson).

A female specimen from Sydney, May 21st, 1923, is very doubtfully referred to the above species. The venation agrees rather well, but the hind tarsi are much wider and the colouration differs, as is usually the case for the females in this family.

Face grey, frons black, mesonotum black, with only a slight greyish tinge without any band. Abdomen velvety black, the segments 2, 3, and 4 with a basal transverse band interrupted in the middle, segment 5 completely black and 6 completely grey. Wing $2\frac{1}{4}$ mm.; body 2 mm.

PLATYPEZA ACUMINATA, *n. sp.*

(Figure 1D.)

Male.—Similar to *P. fergusoni*, but abdomen black, slightly shining, only the 6th segment dull grey. Venation also similar, only M_2 relatively shorter.

Hypopygium (Fig. 1D); quite distinct by the extremity of the claspers which carries a tooth; penis with a sharply pointed extremity, whereas it is blunt in all the other species.

Holotype: Sydney, October 10th, 1921 (Dr. Ferguson).

Genus IRONOMYIA *White.*

As already mentioned, the genotype *I. maculata* White was placed by that author in the family Empidae, but I think there can be no doubt that this species belongs to the Platypezidae. Confusion between these two families has occurred more than once; for instance Meigen placed *Cirtoma* and *Micropterus* in the Platypezidae, and the genus *Microsania*, which has been always considered as belonging to the Empidae, has been recently recognised as a Platypezid by Melander.

Professor Bezzi, to whom I sent some specimens of *Ironomyia*, also considers them to belong to the Platypezidae.

In his generic diagnosis White says that the eyes are touching in the male and that the proboscis is short, hardly projecting from the oral aperture. This is not the case, as shown by Figures 2B and C; the eyes of the male are closely approximated but not touching, and the proboscis and palpi are of fair length.

His account of the venation is nearly correct, with the exception that Sc is not completely fused with R_1 , its base and tip being free. As his figure is rather inaccurate, I am giving here a camera lucida drawing of it (see Fig. 2A), which also shows better the peculiar shape of the Platypezid wing. From the median vein backward the venation is strikingly similar to that of some Empidæ, and consequently well distinct from that of any known Platypezidæ. The fork $M_1 M_2$ is brought back to the middle of the wing, right against the posterior cross vein, which is almost longitudinal in direction, giving thus to the discal cell a shape which is never found in the Platypezidæ but often in the Empidæ. The vein Cu instead of joining A under an acute angle is bent into a short curve and meets A at right angle; this is therefore similar to what is found in the Hybotinæ; it must be this peculiar feature that induced White to place this insect in that sub-family of the Empidæ, to which its general faciès bears however no resemblance whatever.

The structure of the antennæ is rather divergent from what is found in the Platypezidæ; it is more like the antennæ of some Muscoidea. The peculiar manner in which the third segment is articulated with the second is worthy of notice (see Figures 2B and C); it is to some extent similar to what is found in some Dolichopodidæ.

The hind legs do not show the peculiar character of the Platypezidæ, their tibiæ are gradually widening towards the extremity, which is not flattened, the metatarsi are somewhat thicker than the other joints, but the tarsi are in no way dilated as is the case of all Platypezidæ with the exception of *Opetia*. Besides the tibiæ of all the legs carry some bristles dorsally, two on the anterior ones and three or four on the hind ones.

In spite of all these diverging characters *Ironomyia* must be considered as a Platypezid chiefly on account of the nature of its integuments, the texture of the wing, its venation, especially in the anterior part of the wing, and the nature of the stigma, as well as the shape of the head.

IRONOMYIA MACULATA White.

(Figure 2.)

Only the male of this species was known to White. I found in Tasmania three specimens, one female on Mount Wellington in November, 1922, and a male and a female together in the Cradle Valley in January, 1923.

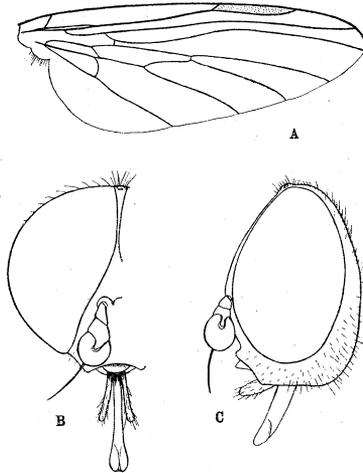


Figure 2.

Ironomyia maculata.—A. wing; B. head seen from the front; C. head in profile.

The female differs from the male as follows:—

Face and frons grey, peristoma shining black on the sides; the width of the frons is equal to $\frac{1}{3}$ of the whole head. Antennae grey, edge of the second joint ferruginous. Mesonotum brownish grey with four longitudinal bands, the external ones placed after the suture and much on the side; between the internal ones there is a very narrow dark line on the posterior part of the notum. Scutellum dark, its sides grey. Halteres with light stem and dark knob.

Abdomen brownish grey with three series of black velvety spots, a median one and two lateral, the posterior edge of the segments being silvery grey in front of the lateral black spots; the first segment is completely grey. Legs as in the male.

Size: Body 6mm., wing 6 mm.